The new substrate is synthetically easily accessible

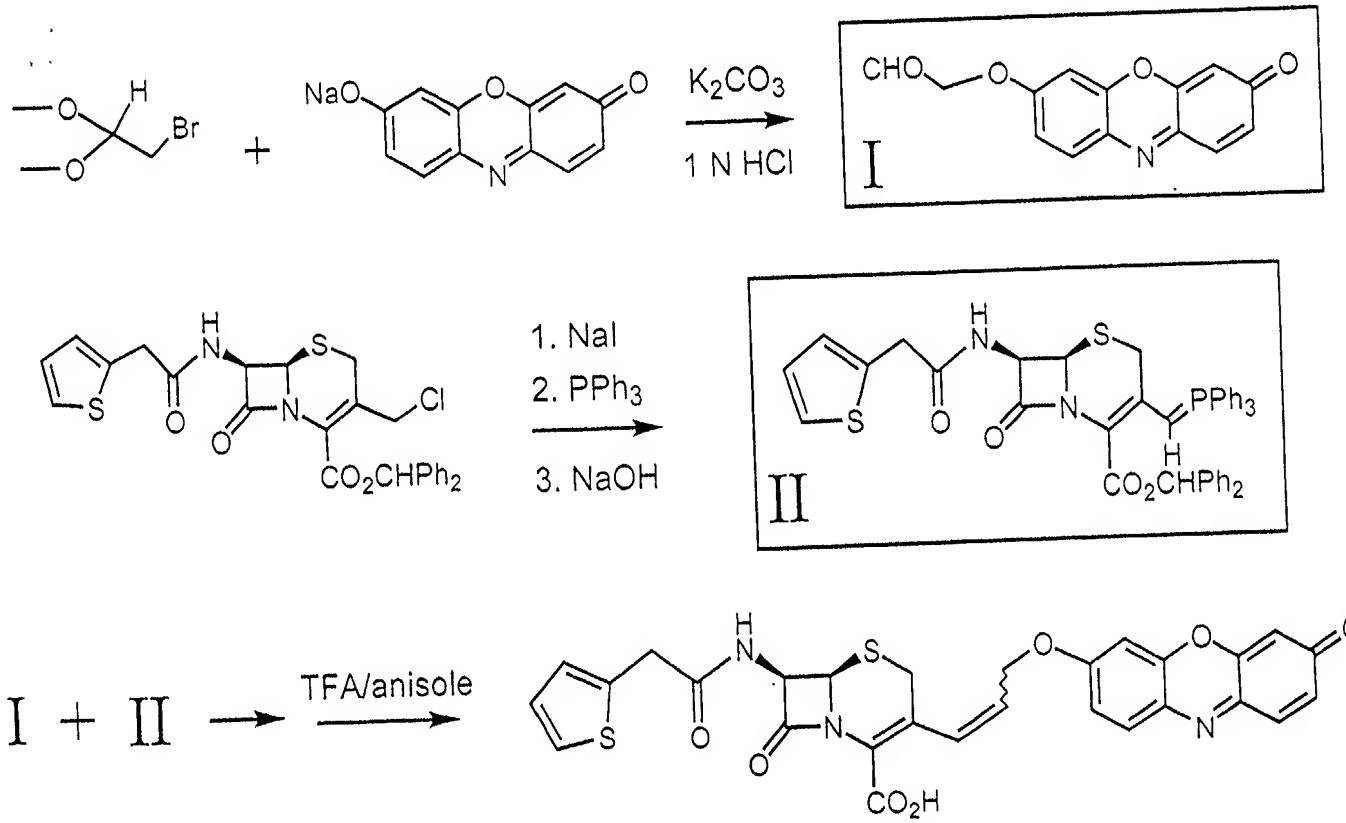


FIG. 1

Enzymatic fragmentation can take place to the new substrate

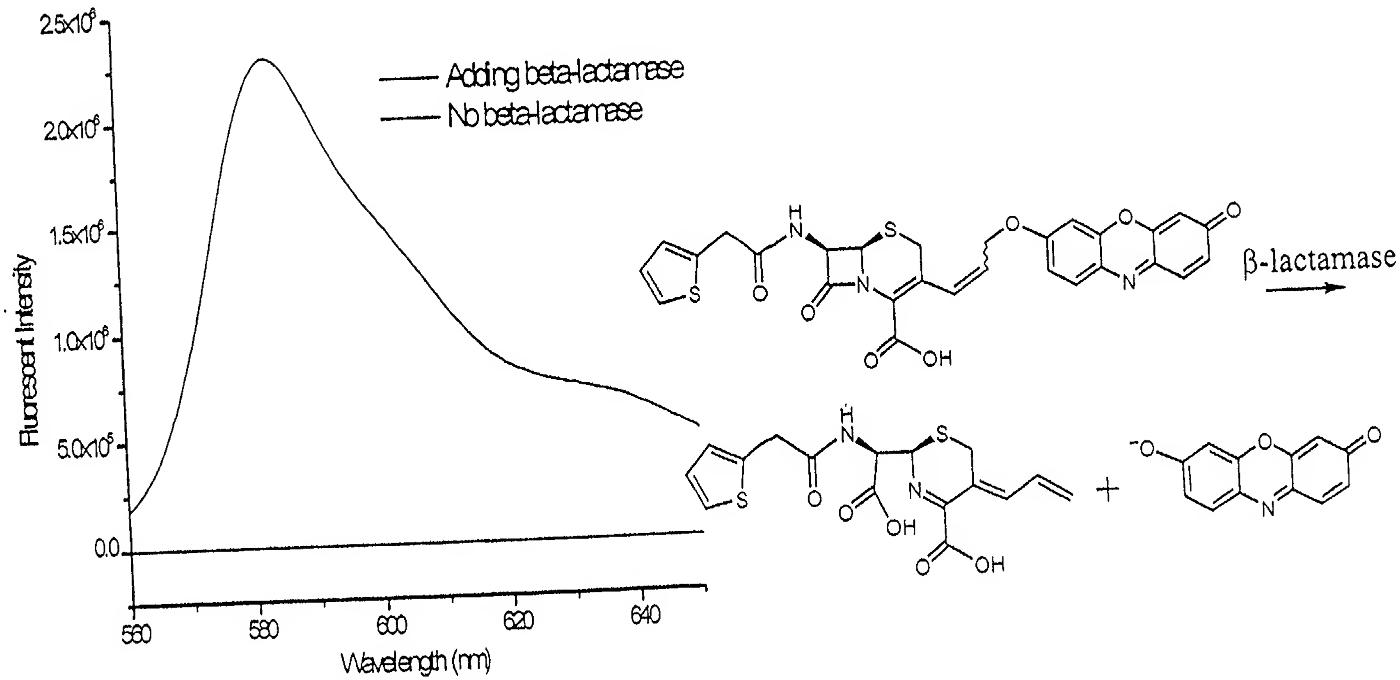


FIG 2

Synthesis of RECTO

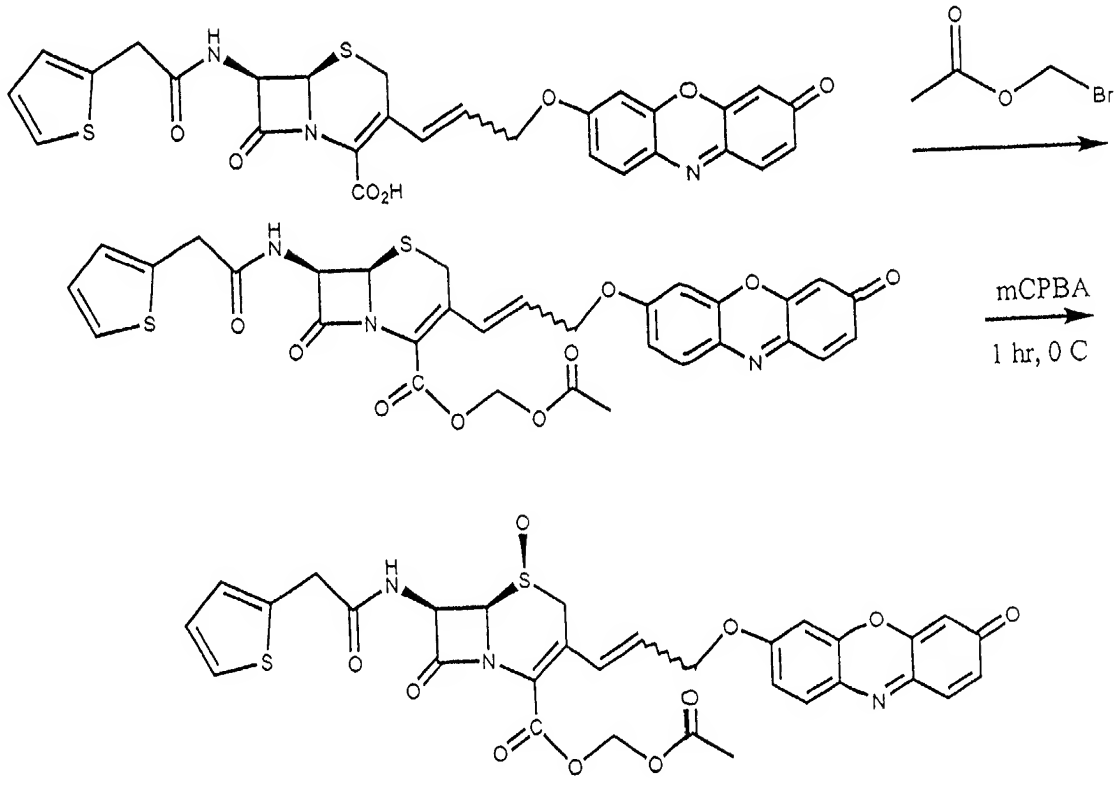


FIG. 3

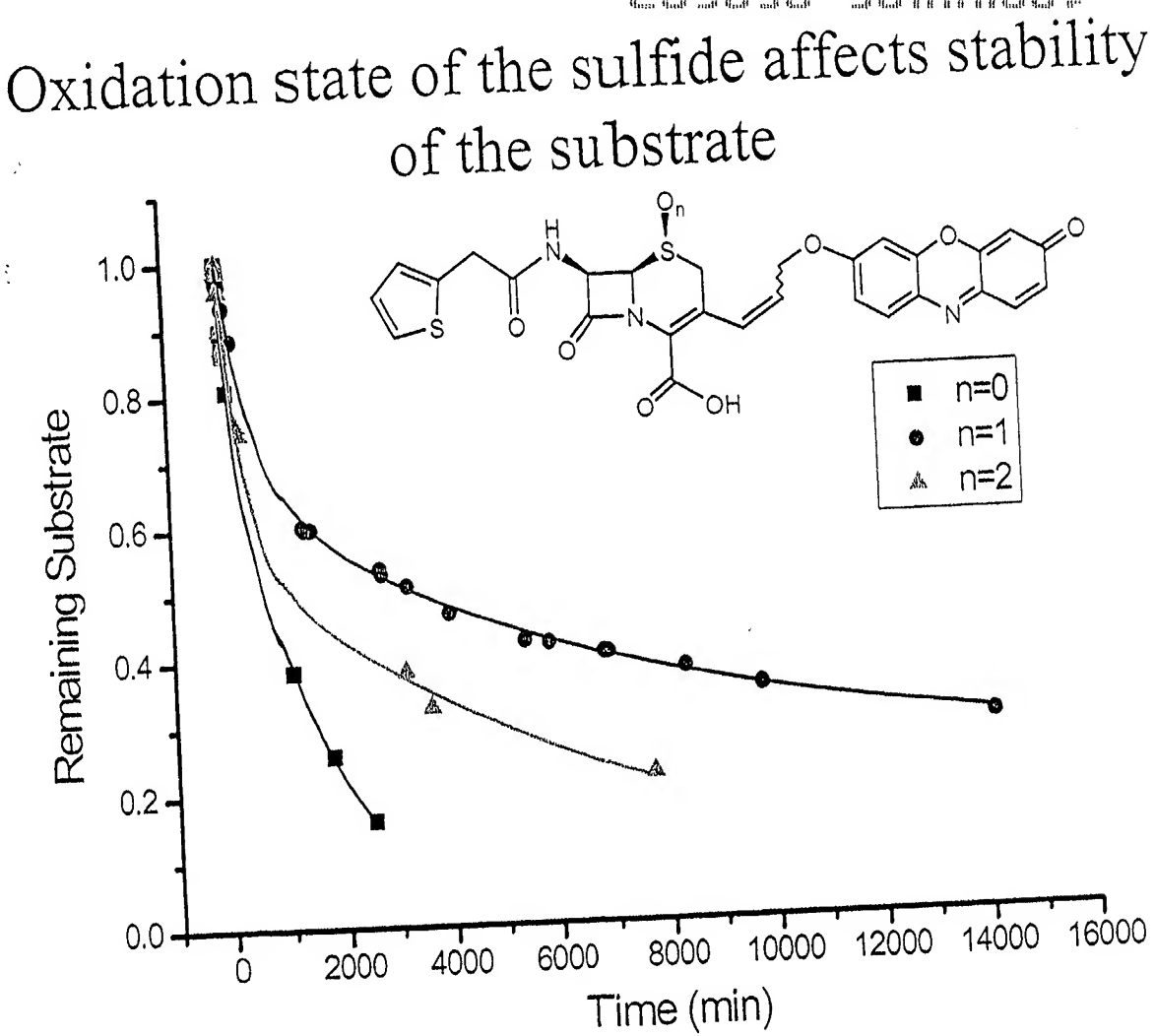


FIG 4

Sulfoxide increases substrate stability

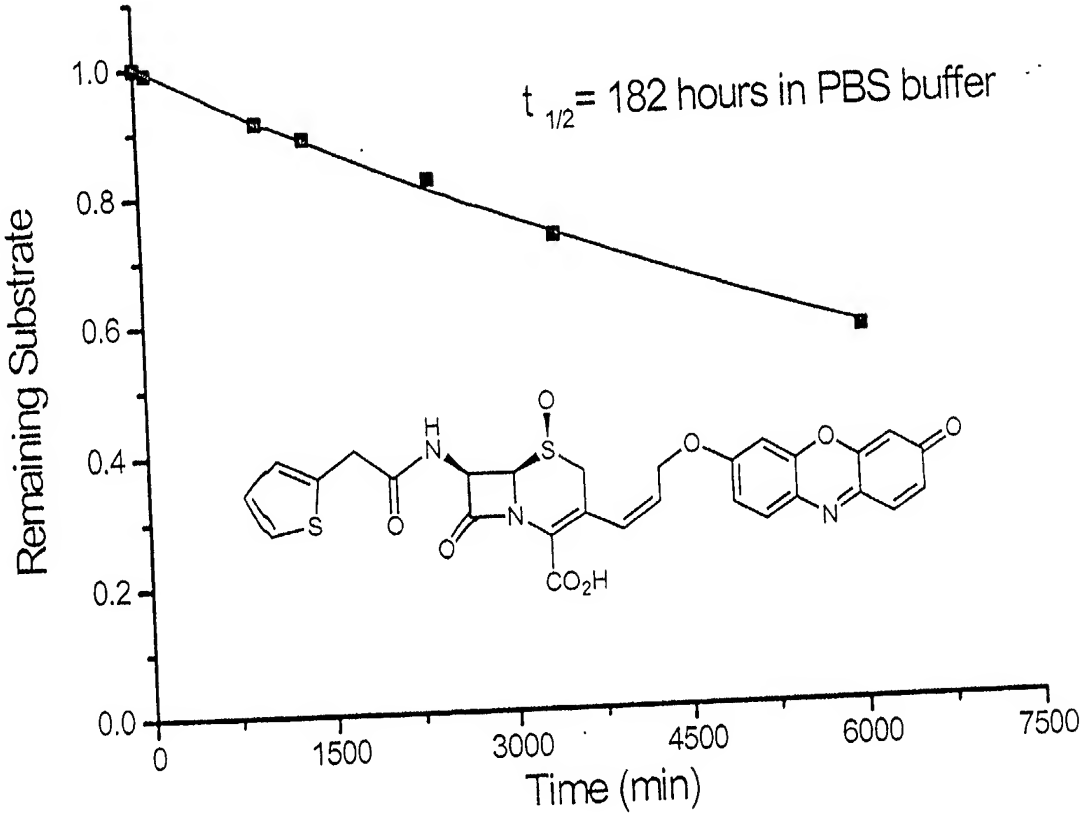
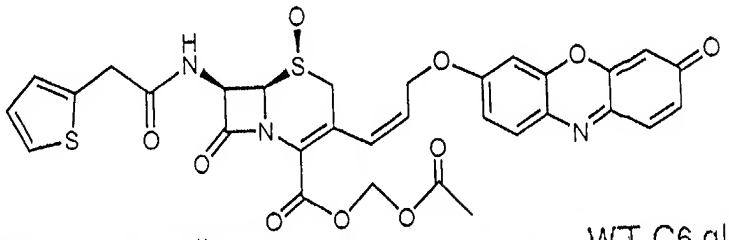
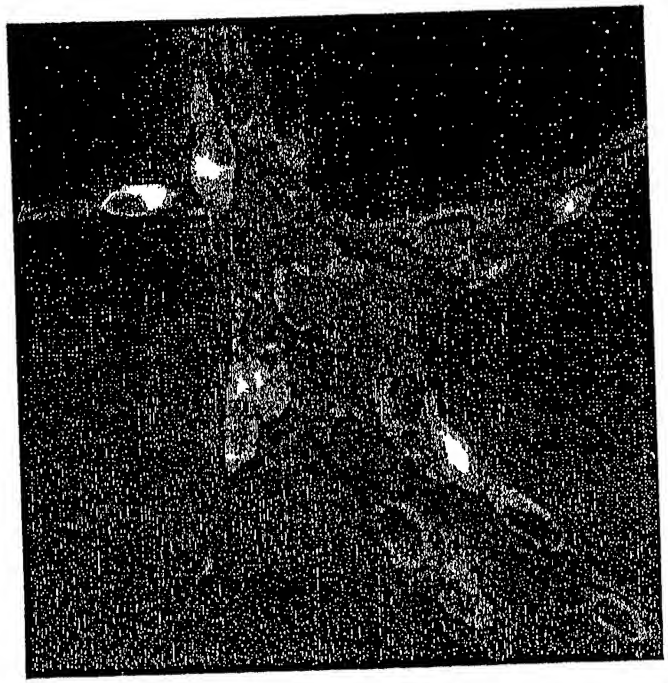


FIG. 5

Increased resorufin deposition in β-lactamase-transfected vs. wild type cells



BLA-transfected C6 glioma cells



WT C6 glioma

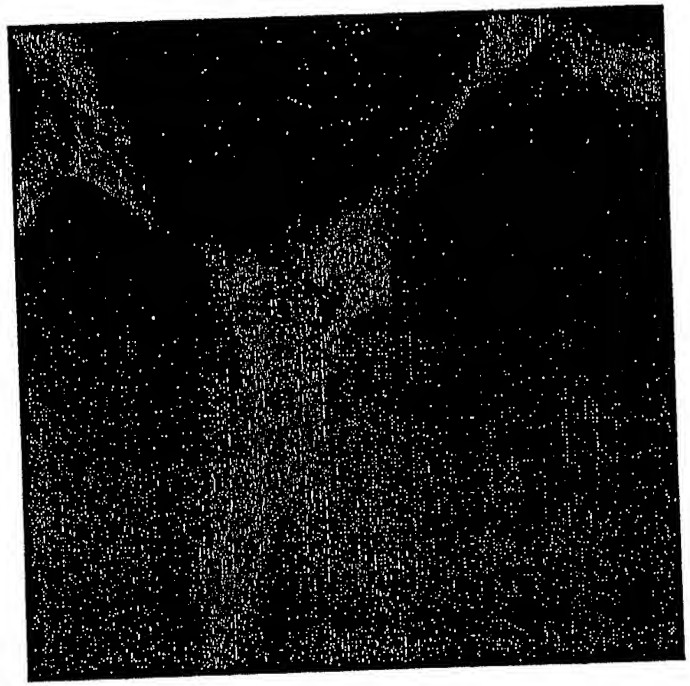
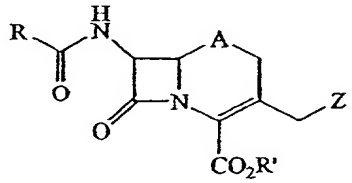


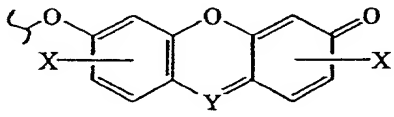
FIG. 6

cephalosporin-phenol ethers that we wish to claim:

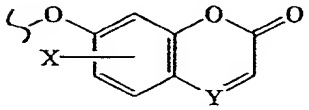


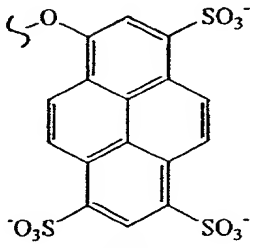
Preferred R = benzyl, 2-thienylmethyl, or cyanomethyl; A = S or SO; R' = H or physiologically acceptable salts or ester groups.

where Z can be:

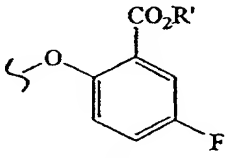
(I) 

where X = H, F, Cl, Br, CO_2R';
Y = N, CH, C-CN, C-CF_3

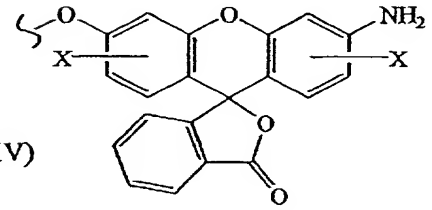
(II) 



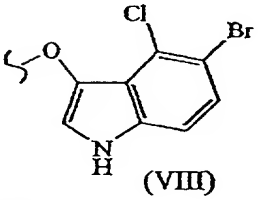
(III)



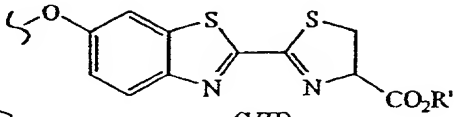
(V)



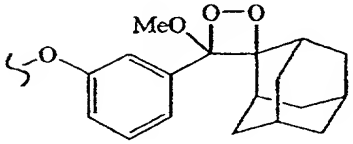
(IV)



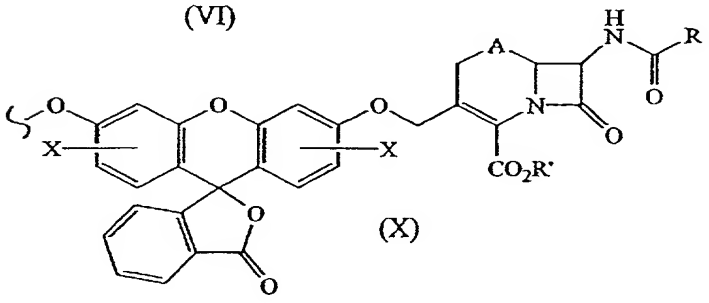
(VIII)



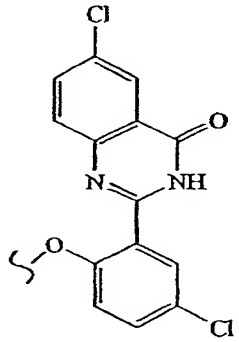
(VII)



(VI)



(X)



(IX)

FIG 7

Resorufin-cephalosporin cleaved by β-lactamase

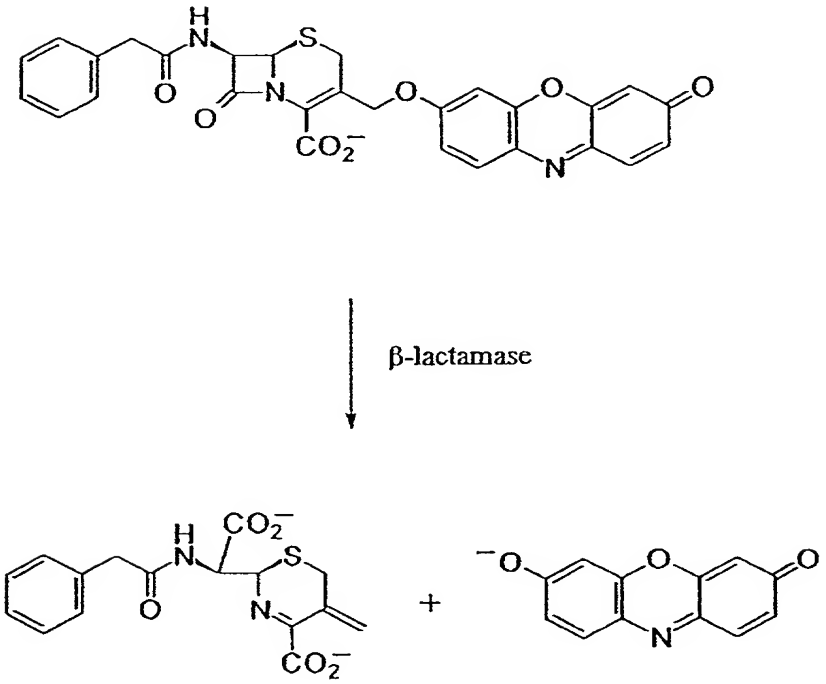


FIG 8

Absorption spectra of resorufin-cephalosporin before and after β-lactamase treatment

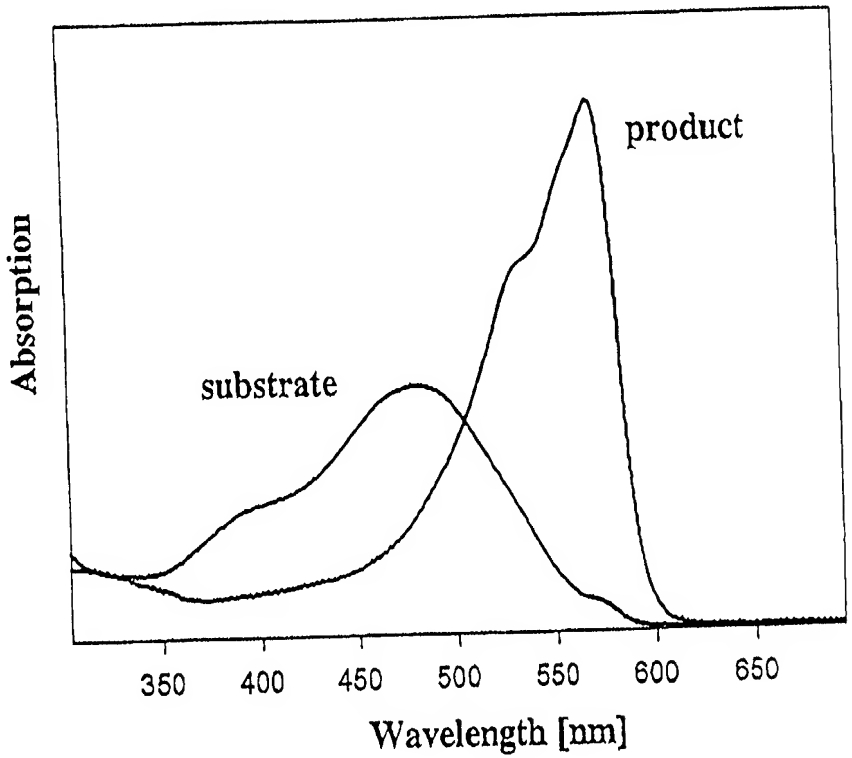


FIG. 9

Fluorescence emission of resorufin-cephalosporin
before and after β-lactamase treatment
(excitation at 570 nm)

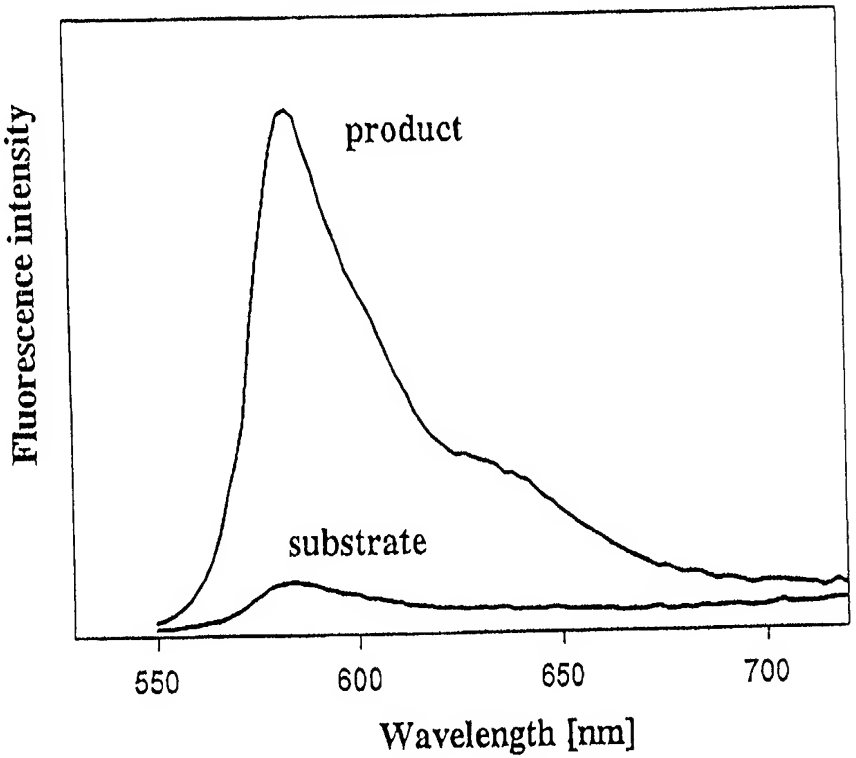


FIG. 10